

### Claims

1.Climate, respectively ventilating channel with an inner-and/or outer lining composed of at least one insulating element, especially with a temperature resistance to fulfill the demands of the normative fire resistance categories or similar norms, in form of a plate, reinforced with a binding agent, or a wire mesh plate, composed of mineral fibers, soluble in a physiological milieu, with said inner-and/or outer lining composed of different insulating elements, which may be disposed at least in one layer in the direction of the longitudinal axis of said climate, respectively ventilating channel, to which they are attached, **characterized in that** the composition of said mineral fibers of the insulating element features an alkali/earth alkali relation of  $< 1$  and the fibrous structure of said insulating element is determined by an average geometric fiber diameter of  $\leq 4 \mu\text{m}$ , in the range of 20 to 120 kg/m<sup>3</sup> and a portion of the binding agent, referred to the fiber mass of said insulating element, in form of a plate, is in the range of 4 to 7 weight % or in form of a wire mesh mat in the range of 0,5 to 1 weight %.

2. Channel according to claim 1, **characterized in that** said binding agent is an organic binding agent, such as phenol-formaldehyde resin.

3. Channel according to claim 1 or 2, **characterized in that** the portion of binding agent, referred to the fiber mass of said insulating element in the form of a plate, is within the range of 4,5 to 6 weight %.

4. Channel according to one of the preceding claims, **characterized in that** the gross density of the outer lining, in a fire resistance category L30 or similar category, amounts to 20 to 40 kg/m<sup>3</sup>, preferably 30 kg/m<sup>3</sup>, at a fire resistance category L60 or similar, it amounts to 60 to 80 kg/m<sup>3</sup>, preferably 70 kg/m<sup>3</sup>, and at a fire resistance category L90 or similar, it amounts to 90 to 120 kg/m<sup>3</sup>, preferably 110 kg/m<sup>3</sup>.

5. Channel according to one of the preceding claims, **characterized in that** said gross density of the inner lining corresponds, at least, to a gross density of fire resistance category L30 or similar, featuring a longitudinal flux resistance according to DIN EN ISO 9053 or  $> 15\text{kPas/m}^2$ .

6. Channel according to one of the preceding claims, **characterized in that** said insulating element features an  $\lambda$ -arithmetic value of  $\leq 35 \text{ mW/mK}$ .

7. Channel according to one of the preceding claims, **characterized in that** said inner lining consists of an attrition-resistant, acoustically transparent cover, such as a glass fleece or similar device, and said outer lining is laminated of a diffusion-resistant cover, such as an aluminum foil or similar unit.

5        8. Channel according to one of the preceding claims, **characterized in that** said insulating element features a point of fusion according to DIN 4102, Part 17, of  $\geq 1.000^{\circ}\text{C}$ .

9. Channel according to one of the preceding claims, **characterized in that** said mineral fibers of the insulating element are produced by internal centrifugation pursuant to the centrifuging basket with a centrifuging basket temperature of at least  $1.100^{\circ}\text{C}$ .

10       10. Channel according to one of the preceding claims, **characterized in that** said mineral fibers of the insulating element, concerning their solubility in a physiological milieu, meet the demands of the European Guideline 97/69/EG and/or the demands of the German Norm for Dangerous Products, Section IV, No. 22.

15       11. Channel according to one of the preceding claims, **characterized in that** said insulating elements, for packing purposes, may be compressed at least in a relation of 1:2, up to a maximum gross density of  $50\text{ kg/m}^3$ , especially at least in a relation of 1:3 up to a maximum gross density of  $30\text{ kg/m}^3$ .

20       12. Inner-/outer lining for a climate, respectively ventilating channel, **characterized in that** said inner-/outer lining is composed of at least an insulating element with the marking features of at least one of claims 1 to 11.

13. Inner-/outer lining according to claim 11, **characterized** by the following ranges of the chemical composition of said mineral fibers in weight % figures:

|  |           |            |           |
|--|-----------|------------|-----------|
| SiO <sub>2</sub>                                     | 39-55 %   | preferably | 39-52 %   |
| Al <sub>2</sub> O <sub>3</sub>                       | 16-27 %   | preferably | 16-26 %   |
| CaO  | 6-20 %    | preferably | 8-18 %    |
| MgO  | 1 – 5 %   | preferably | 1-4,9 %   |
| Na <sub>2</sub> O                                    | 0 – 15 %  | preferably | 2 – 12 %  |
| K <sub>2</sub> O                                     | 0 – 15 %  | preferably | 2 – 12 %  |
| R <sub>2</sub> O(Na <sub>2</sub> O+K <sub>2</sub> O) | 10-14,7 % | preferably | 10-13,5 % |
| P <sub>2</sub> O <sub>5</sub>                        | 0 – 3 %   | especially | 0 – 2 %   |
| Fe <sub>2</sub> O <sub>3</sub> (iron, total)         | 1,5-15 %  | especially | 3,2-8 %   |
| B <sub>2</sub> O <sub>3</sub>                        | 0 – 2 %   | preferably | 0 – 1 %   |
| TiO <sub>2</sub>                                     | 0 – 2 %   | preferably | 0,4-1 %   |
| Other  | 0-2,0 %   |            |           |

14. Self-sustaining climate, respectively ventilating channel according to one of several characteristics of the preceding claims, **characterized in that** it is exclusively composed of platelike insulating elements, reinforced with binding agent, said elements featuring a lamination on their inner- and outer surface.

15. Channel according to claim 14, **characterized in that** said inner-and outer lamination is formed of a diffusion-resistant cover, such as an aluminum foil or similar device.

16. Channel according to claim 14 and 15, **characterized in that** the insulating elements are connected together at their junctions via folds to a rectangular respectively square cross-section.

### **S u m m a r y**

#### **Climate, respectively Ventilating Channel**

5           At a climate, respectively ventilating channel, for the inner-and/or outer lining, insu-  
lating elements with a temperature resistance to observe normative demands of the fire re-  
sistance categories are being used, whose fiber composition features an alkali/earth alkali  
mass relation of  $< 1$ , whose fiber structure is determined by an average geometric fiber di-  
10           ameter of  $\leq 4 \mu\text{m}$ , whose gross density is in the range of 20 to 120 kg/m<sup>3</sup> and whose binding  
agent portion in the form of a plate, is within the range of 4,5 to 7 weight % or in the form  
of a wire mesh mat within the range of 0,5 to 1 weight %.